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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,352	10/15/2003	Sergio Perez	82887/7948	7833

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FITCH EVEN TABIN AND FLANNERY  
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CHICAGO, IL 60603-3406

EXAMINER

CABRERA, ZOILA E

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/687,352

Applicant(s)

PEREZ ET AL.

Examiner

Zoila E. Cabrera

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 32-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 32-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/1/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Final Rejection*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 16-31 have been cancelled.

Claims 1-15, 32-35 are remained for consideration.

New claims 36-66 have been added.

The rejection with respect to claims 1-15, 32-66 is maintained.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7-14, 32-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Williams et al. (US 5,956,248)** in view of **Lonn et al. (US 6,230,089)**.

Regarding claims 1, 8 and 32, **Williams** discloses,

An irrigation controller for controlling the operation of an irrigation system having valves and sensors, said controller comprising: a controller housing having a front cover door and a rear cabinet portion; a base unit mounted within said housing and including a

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control panel removably mounted to the rear cabinet portion and a back plane circuit board permanently mounted to the rear cabinet portion and releasably connected with said control panel, said back plane circuit board including a plurality of discrete electrical output connector sets communicating with said first microcontroller, said removable control panel including a first microcontroller for sending control signals to said back plane circuit and capable of receiving and storing irrigation system programs input into said first microcontroller (Col. 3, lines 28-37); a base module removably mounted within said rear cabinet portion and electrically coupled with said back plane circuit board through one of said plurality of output discrete electrical output connector sets, said base module including drivers and output switches for actuating irrigation valves in accordance with control signals received from said first microcontroller (Col. 3, line 65 – Col. 4, line 4, i.e., panel 18, terminal blocks 20a, 20b and 20c; Col. 4 lines 25-65; please note that base module reads on panel 18 that includes block terminals used for powering and controlling the valves); and an expansion module removably mounted within said rear cabinet portion and electrically coupled with said back plane circuit board through another of said plurality of discrete electrical output connector sets (Col. 4, line 66- Col. 5, line 9), wherein the other of said plurality of discrete electrical output connector sets to which the expansion module is electrically coupled may be any one of said plurality of discrete electrical output connector sets capable of being coupled to a given expansion module independent of the electrical coupling of another expansion module to another of said plurality of discrete electrical output connector sets (Fig. 8, modules 22a and 22b each are independently connected to a electrical output

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connector set). As for the newly added limitations of claim 8, **Williams** discloses, said back plane circuit board including a plurality of module receiving locations each having a discrete output connector set for communicating between said first microcontroller and a module connected thereto (Col. 4, lines 1-11, please note that the expansion modules are at a respective one of the plurality of module receiving locations other than the first one and are independently mounted).

As for claims 7, 9-10, 12, **Williams** discloses,

7. An irrigation controller as set forth in claim 2 wherein each of said plurality of expansion modules has a pin-out electrical connection pattern with said back plane circuit board comprising: 1--EARTH GROUND; 2--AC COM; 3--AC HOT; and 4--COMM "X" where "X" is the particular one of said plurality of back plane circuit board connector pin sets to which the particular expansion module is coupled (Fig. 8; Col. 4, lines 25-68).

9. An irrigation controller as set forth in claim 8 wherein each of said plurality of module receiving locations of said back plane circuit board includes a plurality of discrete output connector sets for transmitting signals from said first microcontroller, said base module being removably connected to a first one of said plurality of back plane circuit board output connector sets, and having drivers and output switches for actuating irrigation valves in accordance with control signals received from said first microcontroller (Fig. 8.; Col. 4, lines 25-68).

10. An irrigation controller as set forth in claim 9 wherein each of said expansion

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modules is removably connected with another of said plurality of discrete output connector sets other than said first one, and has a pin-out electrical connection pattern with said back plane circuit board comprising: 1--EARTH GROUND; 2--AC COM; 3--AC HOT; and 4--COMM "X" where "X" is the particular one of the plurality of output connector sets to which the particular expansion module is coupled (Fig. 8; Col. 4, lines 25-68).

12. An irrigation controller as set forth in claim 11 wherein each of said plurality of module receiving locations of said back plane circuit board includes one of a plurality of discrete output connector sets for transmitting signals from said first microcontroller, said base module being removably connected to a first one of said plurality of back plane circuit board output connector sets, and having drivers and output switches for actuating irrigation valves in accordance with control signals received from said first microcontroller (Fig. 8; Col. 4, lines 25-68).

As for claim 13-14, the same citations applied to claim 7 above apply as well for these claims with the exception of claim 14 regarding "smart" module.

As for claims 33-35, **Williams** discloses,

33. The improvement as defined in claim 32 wherein said expansion module assembly includes a generally rectangular shaped body having front and rear ends separated by top and bottom surfaces, said front end portion carrying a set of exposed electrical connectors, and said rear end portion having output connection terminals thereon for

connection to external irrigation system valves, sensors and the like, and releasable means carried by said body for coupling and retaining said module in an operative position within said protective housing with said electrical connectors on said front end portion electrically coupled to said base microcontroller (Figs. 1, 5, 8).

34. The improvement as set forth in claim 33 wherein said base microcontroller is coupled to a back plane circuit board mounted in said protective housing, said back plane circuit board having a plurality of discrete output connector sets for transmitting signals from said first microcontroller to said set of exposed electrical connectors of said expansion module when said module is in said operative position, each of said plurality of discrete output connector sets located at a respective one of said plurality of module receiving locations (Fig. 8).

35. The improvement as set forth in claim 34 wherein said means for coupling and retaining said expansion module in said operative position comprises a lever pivotally mounted to the top surface of said body, said lever having a locking tab that can be moved by pivoting said lever into and out of abutting engagement with a shoulder formed on a portion of said housing (Col. 4, lines 12-24).

As for claims 36-37, 39-43

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Claim 36 (new): The irrigation controller of claim I wherein each of said plurality of discrete electrical output connector sets provides an independent communication connection to the control panel (Fig. 8).

Claim 37 (new): The irrigation controller of claim 36 wherein the independent communication connection comprises a serial communication line (Col. 1, lines 32-33).

Claim 39 (new): The irrigation controller of claim I wherein the expansion module may be electrically coupled and decoupled to said back plane circuit board through the other of said plurality of discrete electrical output connector sets without removing power to the control panel (Fig. 8, element 30; Col. 4, lines 38-65).

Claim 40 (new): The irrigation controller of claim 39 wherein the first microcontroller is configured to handle dynamic electrical connection and electrical disconnection of the expansion module without restarting the control panel (Col. 4, lines 38-65).

Claim 41 (new): The irrigation controller of claim 39 wherein each of said plurality of discrete electrical output connector sets provides power and data such that a power circuit connection is established prior to a data circuit connection being established upon the electrical coupling of the expansion module thereto, and wherein the power circuit connection is terminated after the data circuit connection upon the electrical uncoupling of the expansion module therefrom (Col. 5, lines 20-39).



Claim 42 (new): The irrigation controller of claim 8 wherein each expansion module may be electrically coupled and decoupled to said back plane circuit board at said respective one of the plurality of module receiving locations without removing power to the control panel (Col. 4, lines 38-65; Col. 5, lines 20-39).

Claim 43 (new): The improvement as set forth in Claim 32 wherein each expansion module may be mounted and removed to the respective module coupling location without removing power to the base microcontroller (Col. 4, lines 38-65; Col. 5, lines 20-39).

**Williams** discloses drivers and output switches coupled with a microcontroller for actuating irrigation system valves (Fig. 8; Abstract). However, **Williams** fails to disclose some limitations of claims 1-2, 8, 32 and limitations of claims 3, 11 and 38. But **Lonn** discloses such limitations as follows:

As for claims 1-2, 8 and 32,  
said expansion module including a second microcontroller capable of communicating with said first microcontroller, said first and second microcontrollers operating together in order to carry out irrigation system operations not capable of being performed by said first microcontroller alone (Col. 3, lines 10-27; Col. 15, lines 37-40. **Lonn** discloses that his system can be used for irrigation controllers. Please note that claim 32 is a jepson type claim wherein "the improvement" is taught by **Lonn**).

2. the controller includes a plurality of said expansion modules removably mounted within said rear cabinet portion, each of said modules including said second microcontroller for operating with said first microcontroller (Fig. 2, elements 100 and 150; Col. 3, lines 1-28).

As for claims 3, 11, and 14,  
a smart module removably mounted within said rear housing portion at a respective one of the plurality of module receiving locations other than the first one and electrically coupled with said back plane circuit board through a third one of said plurality of output discrete electrical output connector sets, said smart module having a third microcontroller capable of communicating with said first microcontroller and operating together with said first microcontroller to control the operation of a variety of irrigation functions that can not be performed by said base module and said expansion module (Col. 8, lines 59-62, i.e., other smart devices).

As for claim 38,

Claim 38: The irrigation controller of claim I wherein the first microcontroller is configured to communicate and operate with the second microcontroller of the expansion module no matter which of said plurality of discrete electrical output connector sets said expansion module is electrically coupled to independent of the

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electrical coupling of another expansion module to another of said plurality of discrete electrical output connector sets (Fig. 2, elements 100 and 150; Col. 3, lines 1-28).

As for claim 44, the same citations applied to claims 1 and 39 above apply as well for this claim.

As for claims 45-46, the same citations applied to claims 40-41 above apply as well for these claims.

As for claim 47, the same citations applied to claim 1 above apply as well for this claim.

As for claims 48, 59, 65 the same citations applied to claim 3 above apply as well for this claim.

As for claims 49, 51, 60, 64 the same citations applied to claims 1, 8, 32 above apply as well for this claim.

As for claim 50, the same citations applied to claims 32 and 43 above apply as well for this claim.

As for claims 52-57, 61-62 the same citations applied to claims 36-41 above apply as well for these claims.

As for claim 58, 63

Claim 58 (new): The irrigation controller of claim 55 wherein the expansion module may be electrically coupled and decoupled to the respective module coupling location during operation of the controller (Col. 5, lines 20-39).

Therefore, it would have been obvious to a person of the ordinary skill in the art at the time the invention was made to combine the irrigation controller with removable station modules of **Williams** with the controller method and apparatus of **Lonn** because it would provide a flexible control system wherein the primary and secondary controllers (or expansion modules) share information to operate more efficiently, the primary controller does not necessarily dictate, control, or otherwise supervise the operation of the secondary controllers (**Lonn**, Col. 3, lines 23-27).

3. Claims 4-6, 15 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Williams et al.** (US 5,956,248) and **Lonn et al.** ( US 6,230,089) and further in view of **Madden et al.** (US 5,602,728).

**Williams** and **Lonn** disclose the limitations of claims 1, 8, and 32 above. However, **Williams** and **Lonn** fail to disclose limitations of claims 4-6, 15. But **Madden et al.** disclose such limitations as follows:

Regarding claims 4, 15 **Madden**, disclose

An irrigation controller as set forth in claim 1 wherein said control panel includes operational controls and indicators for permitting a user to input irrigation program information into said first microcontroller; and a battery coupled with said first microcontroller to provide electrical power to said first microcontroller when said control panel is removed from said housing, whereby said control panel can be completely

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removed from said housing and taken to a remote location for inputting and storing irrigation program information into said microcontroller through said operational controls (Fig. 7, element 37).

As for claims 5-6, **Madden**, disclose

An irrigation controller as set forth in claim 4 wherein said control panel includes a recess for removably receiving said battery, said battery being retained in said recess by a cantilever-type spring mounted to the control panel and releasably biasing against said battery (Fig. 7; Col. 7, lines 25-40).

An irrigation controller as set forth in claim 5 wherein said front cover door is pivotally connected to said rear cabinet portion such that when said door is closed, said door encloses said cabinet portion but can be opened to gain access to the cabinet interior, said door including a light pipe through which a visual identification of the controller status can be observed when said door is in the closed position (Figs. 1-4).

As for claim 66, the same citations applied to claims 1, 7-8, 15, 32 apply as well for this claim.

Therefore, it would have been obvious to a person of the ordinary skill in the art at the time the invention was made to combine the irrigation controller with removable station modules of **Williams** and **Lonn** because it would provide an improved control system that includes a battery powered control module for hand holding, and conveniently positionable in and removable from a system cabinet (**Madden**, Abstract).

### ***Response to Arguments***

4. Applicant's arguments filed May 24, 2006 have been fully considered but they are not persuasive.

Regarding claims 1, 8, 32, Applicant contend that there is no suggestion or motivation to modify the station modules to include a microprocessor, like the secondary controllers of Lonn and further argues that there is no need for the sharing of information between the controller 2 of Williams and the station modules 22.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Lonn discloses that his invention might be used with other applications such as irrigation controllers (Col. 15, lines 37-40). Furthermore, Williams teaches the use of a microcontroller or primary controller in conjunction with the expansion modules and Lonn teaches the advantage of using secondary microcontrollers with the primary controller (Fig. 2) wherein the advantage being that provides a flexible control system wherein the primary and secondary controller (or expansion modules) share information to operate more efficiently, the primary controller does not necessarily dictate, control or otherwise supervise the operation of the secondary controllers (Lonn, Col. 3, lines 23-27).

**Conclusion**

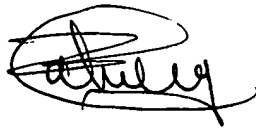
5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning communication or earlier communication from the examiner should be directed to Zoila Cabrera, whose telephone number is (571) 272-3738. The examiner can normally be reached on M-F from 8:00 a.m. to 5:30 p.m. EST (every other Friday).

If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo Picard, can be reached on (571) 272-3749. Additionally, the fax phones for Art Unit 2125 are (571) 273-8300. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 305-9600.

Zoila Cabrera  
Primary Examiner  
8/3/06

A handwritten signature in black ink, appearing to read 'Zoila', enclosed within a hand-drawn oval.